



SUSTAINABLE CITIES PROGRAMME

GUIDELINES FOR CITY ENVIRONMENTAL STATUS REPORT

All India Institute of Local Self Government
In collaboration with
UN-HABITAT



ABOUT THE INSTITUTE

Established in 1926, All India Institute of Local Self Government (AIILSG), India has been actively working in the field of urban development management, and as an active partner in promoting the cause of local government in India and overseas.

The RCUES of AIILSG, Mumbai undertakes policy research, case studies, consultancy services and organises specialized courses, tailored training, seminars, workshops and study visits. The RCUES helps in improving capabilities of municipal officials and elected representatives in the states of Rajasthan, Gujarat, Maharashtra, Goa and the Union Territories of Diu, Daman, Dadra and Nagar Haveli, by upgrading their knowledge and skills required for effective civic governance and providing exposure to current thinking around thematic issues in an environment which facilitates application to their own work requirements in municipal bodies. The RCUES of AIILSG, Mumbai has established itself as one of the leading centres of training and research in urban management field.

The RCUES of AIILSG, Mumbai is also recognized as a National Training Institute (NTI) by Ministry of Urban Development and Poverty Alleviation, Government of India to organize training/capacity building programmes under urban poverty alleviation programme (SJSRY) for municipal bodies in the western region.

The RCUES of AIILSG is committed to the promotion of effective urban management and good urban governance and to the dissemination of new innovative thinking in fields of urban development and governance.

The Institute organises several tailor-made training / orientation programmes for various countries in South Asia, viz, Bangladesh, Nepal, Sri Lanka and other countries, viz, South Africa, Ethiopia, Indonesia, Malaysia, China, etc. The organisation of World Mayor's Conference at Jaipur, Rajasthan in 1998 was a unique event of remembrance in the field of local self government. The Institute participates in various national and international forums and is the oldest member of the International Union of Local Authorities (IULA), the Netherlands. The Director General is one of the members of the Executive Committee of the IULA. The Institute is an active member of International Council of Local Environment Initiative (ICLEI) and the President of the Institute Dr. Jatin V. Modi is Vice President of IULA-ASPAC and Director-General Mr. R. S. Chavan is Executive Member of CITYNET. The Institute has close work – ties with UN-HABITAT, UNDP, UNICEF, US-AID, US-AEP, WHO, DFID, GTZ, CITYNET, CLGF, Ford Foundation, etc. The Institute is the anchor institution for Urban Management Programme (UMP) of UNHABITAT for South Asia.

The Institute has also set up a Fire Academy at Vadodara, Gujarat which imparts regular and specialised training in fire services management. Environment Protection and Research Centre (EPRC) of the Institute at Vadodara in collaboration with ICLEI Japan organises experience sharing visits in environmental management for government and municipal officials.

The Institute is actively working in close collaboration with Ministry of Urban Development and Poverty Alleviation, Government of India, several state governments, development authorities, research and training institutions, international and national agencies. The Institute has its well developed regional centres in Ahmedabad, Bangalore, Belgaum, Bhopal, Panji, Pune, Mumbai, New Delhi, Thiruvantapuram and Vadodara.

The present President of the Institute is Dr. Jatin V. Modi. The Institute was nursed by the late Mr. C. D. Barfiwala who was also its first Director-General. Mr. R. S. Chavan, who is now at the helm of affairs of the Institute is the present Director-General.



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Guidelines For City Environmental Status Report

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First Edition

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Letter From The Director, Environment, Government of Maharashtra

Preface

Protection of environment and ecological aspects is a constitutional duty of the urban local bodies in the country as per Twelfth Schedule introduced in the Constitution, vide 74th Constitutional Amendment Act 1992. According to the Municipal Legislation, the urban local bodies in Class I cities are required to release an annual Environmental Status Report which will indicate the status of environment management in the city and identify areas where mitigation measures are required to be taken.

A review of the ESR released by different cities reveals that there is no uniformity in the ESR format followed by the cities. In the absence of any government guidelines on the subject, the ESRs do not serve the purpose of an effective planning and budgeting tool, which is essential for planning and implementing mitigation measures.

The All India Institute of Local Self Government has evolved a format and comprehensive guidelines on the ESR under the Sustainable Cities Programme. These guidelines have been compiled after elaborate discussion with the City Managers, Environmental Engineers and experts. The Director of Environment, Government of Maharashtra, Member Secretary, Maharashtra State Pollution Control Board, Scientist and Head National Environmental Engineering Research Institute, Mumbai, Mr. Vishram Patil, Sr.Planner, MMRDA and CIDCO officials have richly contributed to this work.

It is expected that these guidelines will enable the ULBs not only in Maharashtra but in other states or region in identifying gaps and planning environmental improvement measures in their cities.

The Project team of SWM Cell and Regional Centre of Urban and Environmental Studies of the AILSG comprising of Mr.A.K.Jain, Dr.Prof.Sneha Palnitkar, and Mrs. Uma Padhye has done commendable hard work to prepare these guidelines. The UN-Habitat officials Mr. Ole Lyse, Mr. Chris Radford and Cecilia Njenga-Kinuthia have given valuable guidelines in the preparation of these guidelines.

R. S. Chavan

Director General

AILSG

Letter From The Director, Environment, Government of Maharashtra

The Draft Guidelines were submitted to the Director, Environment, Government of Maharashtra. The Director, Environment reviewed the Draft and recorded a few observations which have been incorporated in the final Guidelines. The letter of the Director, Environment is reproduced below :

GOVERNMENT OF MAHARASHTRA

Tel : 22852696

Fax : 22025946

No. SER 2001/630/C.R.37/01/T.C.1

Environment Department,
15th floor, New Admn.Bldg.,
Madam Cama Road,
Mantralaya, Mumbai - 400 032

Dated :- 3rd February., 2005.

To,

All India Institute of Local Self Government,
Sthanikraj Bhavan, C.D.Barfiwala Marg,
Andheri (West)
Mumbai - 400 058

Subject :- Format of ESR.

Dear Sir,

Kindly refer to your D.O letter dated 17th January., 2005 on the subject mentioned above. The Status of Environment Report (SoER) format for Municipal local bodies developed by All India Institute of Local Self Government covers almost all aspects of status report and generally found satisfactory.

After the review of this SoER some of the observations of the Environment Department are furnished herewith for information and further necessary action.

Thanking you,



Yours faithfully,

G.N. Warade

(G.N. Warade)
Director (Environment)

Guidelines For City Environmental Status Report



1. BACKGROUND OF AILSG AND SUSTAINABLE CITIES PROGRAMME

- a) All India Institute of Local Self-Government (AILSG) is anchoring the Urban Management Programmes UMP) of the UNDP/UN-Habitat in South Asia. The focus of the UMP is on civic engagement for Urban poverty alleviation, environment management with gender as the cross cutting theme. The institute has developed considerable experience in the city consultative process and evolving development strategies through stakeholder's participation.
- b) In pursuance of the commitment expressed in global agenda 21, to harmonize environment and development goals, the UN-Habitat, in collaboration with UNEP have launched a Sustainable Cities Programme (SCP) in 1996. The All India Institute of Local Self-Government, Mumbai has been implementing this programme in Maharashtra since October 2003. It has been proposed to implement the programme in two phases. Phase I will be a pilot phase involving two cities and in Phase-II, the programme will be replicated in eight more cities of the state.

Sustainable Cities Programme

- a) Sustainable Cities Programme (SCP) is a world-wide technical cooperation programme of the United Nations and a joint initiative of UN-HABITAT and UNEP. It works at city level in collaboration with local partners to

strengthen their capabilities for environmental planning. It directly helps local authorities and their partners to achieve a well-managed urban environment as part of a sustainable urban development process founded on broad-based stakeholder-participation which includes and empowers all city dwellers. The SCP process also follows the principle that the environment is not an end in itself, not something to be merely "protected" from development; instead, the environment is viewed as a resource to be carefully managed on a sustainable basis for the betterment of mankind's living environment.

- b) The SCP aims to support cities in finding - and managing - development paths, which are more effectively fitted to their environmental, opportunities and constraints. The common approach shared by SCP cities is:

- ♦ Central focus on development-environment, interactions,
- ♦ Broad based participation by public, private and community sector groups
- ♦ Concern for inter-sectoral & inter-Organizational aspects
- ♦ Reliance on bottom-up and demand-led responses
- ♦ Focus on process, Problem-solving and getting the things done
- ♦ Emphasis on local capacity-building.

The key point is that SCP city project will build an effective process of environmental planning & management, which is integrated into local society and government.

2. THE EPM PROCESS

The SCP attempts to achieve these objectives through a participatory bottom up planning process called Environmental Planning and Management (EPM) Process. The main focus of the Sustainable Cities Programme, in nut shell, is to balance the Developmental and Environmental goals. Yet another objective of the programme is the development, based on equity and to make the planning and implementation process more inclusive. Identification of the stakeholders and their involvement in the planning process which is responsive to the local city needs is a central feature of the process called Environment Planning and Management Process.

3. ELEMENTS OF SCP- EPM PROCESS

The SCP is implemented through a series of inter-linked operational activities, which demonstrate in practice, an innovative approach to manage urban development in consonance with environment issues and thus progressively develop local capabilities towards this objective. EPM is a logical framework, systematized through the experience of the SCP, which underlies the whole process.

4. SCP IN MAHARASHTRA

The AILSG is implementing the project on Sustainable Cities Programme in Maharashtra in the following phase wise manner:

Phase I. The SCP process is being implemented in two Class I cities – Panvel and Virar as demonstration cities, in the first phase. These demonstration cities were selected after discussion with the concerned city managers and other stakeholders, based on the following criteria: -

- Political and administrative commitment of the cities to own and support sustainable SWM practices.
- Readiness of the cities to promote stakeholder participation and involve the community in planning and decision-making.
- Ability and readiness to the cities to generate counterpart funding for the implementation of the action plans.
- Geographical location with a view to larger demonstration effect and replicability of the SCP project.

Phase II. In the second phase, the SCP process will be replicated in eight other cities representing different geographical and administrative regions of the state.

The project contemplates to apply the EPM process in selected cities in the State of Maharashtra as follows:

- a) Selection and customizing of the SCP/EPM Toolkit. Support the two city governments and their partners in identifying their key problem areas, stakeholder partners, preparing ESR format and their "Environmental Profiles or SWM Profiles", and holding city consultations to prioritize the issues in the identified cities, culminating in "Urban Pacts". A series of preparatory meetings at the city level will be held to set up an inter-sectoral core group. This forum will provide constant support to the consultation both in the preparatory phase and in the follow-up process.
- b) The formats and tools developed by the UN Habitat for the city consultations and the follow-up process will be suitably refined, customized, translated and adapted to the local needs for application in the pilot cities and for further application in the suitably amended form in other cities during the replication phase. The SCP process is also being used to

evolve format of the environment status report as an effective tool for a comprehensive environment audit of the cities. The parameters and the format of the ESR will be tried in pilot and other cities and will be recommended to the State for standardization under existing legislation.

- c) Once the SCP/EPM process is standardized, the same will be replicated in eight more cities in the state in the SECOND PHASE of the programme. Along with the first two pilot cities, these eight cities will be selected so as to represent all the regions of the state. There shall be continuous documentation and revision of tools to add substance and larger relevance to them.
- d) The AILSG will develop resource and reference material for capacity building interventions and advisory services. It will also document the discussions and the experiences of the two demonstration city consultations. This will help in standardizing the tools for upscaling and replicating the consultative process in other areas. The SWM Cell of the AILSG will develop reference material and disseminate the information to all the targeted cities for experience sharing. The AILSG shall extend the services of its professionals to the concerned cities and for different targeted activities as the process advances. It is proposed to build the capacity of the ULBs in sustaining and institutionalizing the process at the city level.

5. GUIDELINES FOR PREPARATION OF ENVIRONMENTAL STATUS REPORT (ESR)

The Objectives of ESR

With rapidly growing population and fast degrading urban environment, it is imperative to take stock of the status of the urban environment from time to time, explore and adopt sustainable

mitigation strategies for control of pollution and conservation of resources, prepare a road map for their implementation and monitor the status again after implementation. Poor urban environment adversely affects the city life and also the economic potential of the cities. The Environmental Status Report (ESR) would contain the above features and would thus be an important tool for sustainable urban and environmental management. Preparation of ESR has also been made a mandatory responsibility of Urban Local Bodies (ULBs).

Legislative Framework

- In Maharashtra, through amendments made to all relevant municipal legislations in 1994, urban forestry, protection of environment and promotion of ecological aspects have been made obligatory duties of ULBs giving effect to the Constitution (74th Amendment) Act, 1992. The Chief Executive Officers of all Municipal Corporations and 'A' Class Municipal Councils (population of 100,000 and above) in Maharashtra are required to prepare and place before their bodies, by July 31 every year, a report on the status of environment within their area during the previous year. The State Government is expected to specify the matters to be covered and manner of preparation of the Environmental Status Report (ESR). The State Government is yet to issue comprehensive guidelines for preparation of the ESR.
- Apart from the legal provisions of municipal legislations, defining responsibilities of ULBs, the following are the other important national legislations and rules governing the state of urban environment :
 - ◆ The Water (Prevention and Control of Pollution) Act, 1974
 - ◆ The Air (Prevention and Control of Pollution) Act, 1981

- ♦ The Environment (Protection) Act, 1986
 - ♦ The Motor Vehicles Act, 1988
 - ♦ The Environment (Protection) Rules, 1986
 - ♦ Hazardous Wastes (Management and Handling) Rules, 1989
 - ♦ Bio-medical Waste (Management and Handling) Rules, 1998
 - ♦ The Coastal Regulation Zone (CRZ) Notification, 1991
 - ♦ The Municipal Solid Waste (Management and Handling) Rules, 2000
- The Water and Air Acts provide for setting up of Central and State Pollution Control Boards, their powers and functions and levy of penalties and procedures to be adopted for this purpose in relation to specific air and water pollution. The Environment Act, 1986 which is a comprehensive legislation, provides for the powers of the Central Government for prevention, control and abatement of environment pollution in general. This Act regulates the production processes, emission and discharge of pollutants, handling of hazardous substances etc. The Rules framed under the Environment Protection Act prescribe standards for emission and discharge of pollutants, and procedures to be adopted for enforcing the provisions of the main Act. The Rules also prescribe standards for water quality and ambient air quality, including those for noise, standards for emission from motor vehicles etc. The Motor Vehicles Act provides for control and use of motor vehicles and control of traffic.
 - The Rules framed for management and handling of hazardous and bio-medical waste under the Environment Protection Act specifies responsibilities of those handling such waste, their authorization and segregation, packaging, storage,

transportation, treatment and disposal of such waste. The Coastal Regulation Zone Notification regulates all development activities along the coasts and has had a significant impact on the development of coastal cities. The Municipal Solid Waste Rules mandate a primary storage system of waste at source and its collection from house to house. It prohibits littering through the provision of community waste storage bins. The Rules also mandate improvement of existing landfill sites within a specified period.

- The Air, Water and Environment Protection Acts provide for punishment and penalties on any person in case of non-compliance of various provisions of these Acts. These Acts have specific provisions for dealing with the offences of Government Departments and consider the Head of the Department as deemed to be accountable for non compliance and liable for punishment, except in the case of proof of lack of his knowledge and exercise of due diligence by him for prevention of the offence. Any other Government officer is also punishable if proved guilty.

Sustainability of Environmental Improvement Efforts

- While there are a host of legislations and rules related to prevention, control and abatement of air and water pollution and those related to handling and disposal of hazardous substances, which also provide for their enforcement, the past efforts made for improving the urban environment have not been particularly successful for a variety of reasons. Though some general measures have been adopted for controlling emissions of pollutants from industries and motor vehicles at source, the urban environment continues to degrade with increasing number of motor vehicles and traffic congestion and disposal of solid and liquid waste on land and in water courses

without adequate treatment. Excessive extraction of ground water and flooding of areas due to encroachment of natural drainage systems are other common environmental problems faced in urban areas.

- The ever increasing urban population pressure is resulting in the requirement of more resources such as water and electricity for consumption and land and water courses for disposal of solid and liquid waste. However, with the limited availability of these resources in

most urban areas, these cities are becoming increasingly dependent on outside areas extending their environmental problems to new areas. This trend cannot be arrested unless sustainable strategies are adopted for conserving the urban environmental resources with the help of reduction in waste and recycling and reuse of resources with non-conventional technologies. Some such approaches are specified below :

Sr. No.	New Approaches	Benefits
1	Rain water harvesting	Increasing the ground water table, less requirement for additional water and thereby for the need to undertake new water supply projects which are high-cost, high-energy consuming and which displace people and submerge trees.
2	Metering of potable water supply, leakage control and levying appropriate tariff	Reducing wastage of treated water and promoting re-use of waste water after treatment.
3	Biological treatment of waste water and its reuse for non-potable purposes	Reducing requirement for additional water, saving in cost and use of chemicals and energy. Reduction in disposal of untreated waste.
4	Recycling of solid waste and biological treatment for degradable waste for production of manure and energy	Extracting economic value from waste, reduction in disposable waste and land requirement and saving in the cost of fertilizers and energy.
5	Decentralisation of solid waste collection, conveyance and disposal system	Reducing transportation costs and reducing burden on existing disposal sites. Separation of waste for differential treatment and disposal
6	Use of alternative fuels and traffic improvements	Reducing air pollution in general and at congested areas in particular.
7	Demand Management for Traffic: cordon pricing, regulated parking	Reducing congestion and air pollution by discouraging use of private motor vehicles.
8	Provision of basic services in informal settlements.	Improving the living conditions of urban poor and, in general, in urban environment.

Role of Urban Local Bodies

- Though the ULBs are the agencies concerned and affected most by the state of environment in their areas, the institutional set-up dealing with various environmental issues is rather complex. The responsibility for industrial pollution and handling of hazardous substances rests with the Central Pollution Control Board (CPCB) and the State Pollution Control Boards. The emissions from motor vehicles are regulated by the Regional Transport Office of State Home (Transport) Department. Most ULBs in Maharashtra are also dependent on the Maharashtra Jeevan Pradhikaran (State agency) for their water and sewerage systems. The role of ULBs is thus limited to solid waste management, provision of roads, storm water drainage, preparing Development Plan and granting development permissions and, wherever applicable, for provision of water supply and sewerage systems. However, non-provision of adequate municipal services is one of the important causes of degradation of urban environment.
- A mere look at the functions and responsibilities of the ULBs indicates that most of the work carried out by them is directly or indirectly concerned with urban environment. However, the environmental concerns are not reflected in the operation of these agencies. Building the sustainable environmental agenda into the overall functioning of ULBs is necessary. The proper preparation and implementation of the ESR would go a long way in achieving sustainable urban environmental improvement.

6. FORMAT FOR PREPARATION OF ESR

City Environment Profile

Preparation of Environmental Profile (EP) of a city is an essential part of the Urban Environmen-

tal Planning and Management (EPM) Process under the Sustainable Cities Programme (SCP). The EP provides basic information on the city and city government; all activity sectors, environmental resources and hazards in a city and their interaction and influence on each other and the stakeholders. The ESR should provide the environmental profile of the city including major environmental features and information concerned with environment such as number and growth in industries and motor vehicles, number of slums, slum population and state of service provision, availability of roads and congestion estimates, sources and availability of water, availability of usable land, new projects undertaken by the Urban Local Authority etc.

After the City Profile, the ESR should cover the following aspects

- Analysis and findings of comprehensive environmental baseline data for various environmental indicators leading to identification of pollution zones, polluters and population or environmental resources affected by pollution.
- Identification of urban infrastructure deficiencies generally at the city level and for various geographical parts of the city and analysis of alternative sources used by the people.
- Identification of settlements of urban poor and analysis of their status vis-à-vis various human development indicators and environmental services.
- Identification of capacity building requirements of the ULB, including those related to building a computerised Environmental Information System, and measures for improvement in the local capacity.
- Preparation of a perspective plan specifying environmental management strategy and identification of mitigation measures.

- Preparation of Annual Environmental Action Plan specifying the targets to be achieved, activity schedule for their achievement and cost of implementation.

Assessment of Depletion / Degradation of Environmental Resources

At the city level, the base-line primary data on major environmental pollutants is not available. It is therefore necessary to make arrangements to collect and analyse such information periodically. The ESR should include investigation, assessment and monitoring of air pollution, noise pollution, water pollution, ground water contamination, soil contamination, coastal pollution and solid waste management. Such assessment would cover the following environmental indicators :

- Assessment of ambient concentration of air pollutants such as SO₂, NO_x, SPM, PM₁₀, hydrocarbons, lead, ammonia, H₂S and other diurnal and annual variations in the areas in different parts of the city including those along the road-sides.
- Assessment of ambient noise levels at various locations in the city including heavily congested traffic junctions.
- Assessment of ambient water quality of drinking water sources, rivers, lakes, creeks and concentration of water pollutants, pH, BOD, SS and DO.
- Assessment of quality of ground water that is used for drinking and its pollution levels.
- Assessment of current practices of collection, transportation and disposal of domestic, industrial and commercial solid waste and bio-medical waste.
- Assessment of soil contamination in the form of leachates, toxic chemicals etc. particularly

near waste dumping sites and settlements of urban poor.

- Identification of existing terrestrial and marine ecological features such as agriculture, forests and tree cover, flora and fauna, mangroves, fisheries, wild life etc.
- Identification of low-lying areas, open spaces, tourism and recreation areas heritage structures etc.

Pollution Zones / Sensitive Areas and Ascertaining Causes

The analysis of baseline data and its comparison with standard norms of pollution would lead to identification of pollution zones for various pollutants. The pollution zones for each of the pollutants could be different with certain areas overlapping. The analysis would also lead to identification of areas sensitive to pollution due to their peculiar geography or location.

The analysis would also include ascertaining the causes of higher pollution in the identified zones. For example, traffic congestion could be a cause for higher concentration of SO₂, NO_x in the air. The pollution of water could be caused by disposal of domestic and industrial waste, soil contamination due to dumping of hazardous solid waste etc.

Estimation of Pollution Loads

Air Emission Inventory

This includes preparation of emission inventory estimating the air pollution loads for domestic, industrial, power and transport sectors along with fugitive emission in terms of emission sources and total pollution load. This will require survey of various stationary and mobile sources of air emissions to determine quantities of air pollutants such as SO₂, NO_x, SPM, CO based on emission factors.

Water Pollution Loads

This includes identification of polluters and estimation of water pollution loads from industrial and domestic sources in lakes, rivers, drains, lands and other receiving bodies in terms of discharge rate and total pollution load.

Polluters and Areas Affected

The emissions of air and water pollutants from various sources would be compared with the standard norms prescribed by the CPCB/State Pollution Control Board. This would lead to identification of sources of pollution in excess of emission norms.

The analysis would also include identification of areas affected by such pollution emissions and comparison of such areas identified by source of pollution to the pollution zones identified earlier.

The identification of pollution zones and polluters would lead to the assessment of the population and environmental resources affected by pollution and the extent of pollution and its impact.

Deficiencies in Urban Infrastructure

Any deficiency in the provision of urban infrastructure such as water supply, sewerage, solid waste management, roads, storm water drainage, recreation facilities such as open spaces, gardens and playgrounds etc. by the ULB has a potential to result into adverse impact on local environmental resources. The following information, the most important source for which is the ULB itself, will have to be collected, compiled and analysed for inclusion in the ESR :

- Assessment of the need for various infrastructure services. This would be basically derived from population and standardized norms for provision of such services. It is important to note here that it is the need and not the demand for services which is to be assessed. However, the norms could be made more realistic.
- Assessment of the actual provision of infrastructure services in terms of quantity, quality and geographical coverage with specific reference to low income settlements.
- Estimation of deficiencies based on point stated above. Deficiencies could be in the form of inadequate geographical coverage or inadequate quantity and quality.
- Information on alternative arrangements made by the ULB or the people, if any, to meet the deficiencies. These could include use of ground water, septic tanks, use of low-lying areas for defecation and dumping of waste, burning of waste etc. Here, it is necessary to break down (un-bundle) each infrastructure service into its major components for detailed assessment, e.g. SWM into collection, storage, transport and disposal of solid waste.
- Assessment of the nature of impact of such alternative arrangements or practices followed by the ULB or the people on the environmental resources of water, air and land in terms of their depletion and degradation and on health and safety of the population.

Infrastructure Deficiency and its Impact on Natural Resources and Population

The ESR should cover the assessment of the following infrastructure deficiencies normally found in the cities and their possible impacts :

Sr. No.	Urban Infrastructure Deficiency	Possible Impact
1	Water Supply a Inadequate treatment, contamination during transmission and distribution of municipal supply b Consumption of poor quality water due to non-availability of municipal supply	Health problems to consumers.
2	Solid Waste Management a Inadequate cleaning of public places b Non-collection of waste from community bins c Improper transport of waste d Improper disposal of waste e Burning of Waste f Mixing of hazardous and non-hazardous waste at various stages	Air pollution on account of SPM, breeding of insects leading to spread of diseases. Soil contamination, air pollution due to obnoxious gases, bad odour, breeding of insects leading to spread of diseases. Air pollution due to obnoxious gases, bad odour, spread of waste and leachates. Soil contamination, air pollution due to obnoxious gases, bad odour, breeding of insects leading to spread of diseases. Air pollution. Spread of hazardous material and contamination of various mediums and natural resources.
3	Sewerage a Non-availability / Inadequate provision of toilets (Use of open areas for defecation) b Non-availability of municipal collection system c Faulty municipal system for collection and transport of sewage d Inadequate treatment and disposal system	Pollution of receiving bodies including soil, water, air pollution due to gases, bad odour, breeding of insects leading to spread of diseases.
4	Roads a Un-paved roads and footpaths b Inadequate capacity of road network c Poor traffic management	Air pollution due to dust. Air pollution by gases emitted by motor vehicles concentrated at certain locations due to congestion .
5	Storm Water Drainage a Non-availability or inadequacy of municipal SWD system	Flooding of low-lying areas leading to breeding of insects and spread of diseases.
6	Open Spaces, Gardens & Playgrounds a Lack of adequate open spaces, gardens and playgrounds and use of unsuitable places by population for recreation activities	Increase in air pollution at certain locations and exposure of the population, particularly children, to unhealthy environment

Assessment of Impact of Pollution and Infrastructure Deficiency

Based on the assessment of the quality of various environmental resources and pollution loads through emissions and assessment of deficiencies in the urban infrastructure, city level impacts would be identified preferably with the help of analysis of health status information.

Status of the Urban Poor

The urban poor mostly stay in unplanned and unauthorized developments of permanent or semi-permanent nature which are characterized by unhygienic living conditions mainly on account of infrastructure deficiencies. Such settlements could also result in blocking of natural drainage systems, land-slides, exposure to air pollution (due to non-conforming location) and accidents, traffic bottlenecks, fire hazards etc. The urban poor, particularly the women and children, are environmentally the most vulnerable section of the urban society and improving their living conditions requires assessment and monitoring of their status specifically and regularly. The following information on the physical environment and human development indicators will have to be collected, compiled and analysed in this regard for inclusion in the ESR:

- Whether such settlements are located in low-lying areas or on dangerous locations such as

hill-slopes, under high-tension electricity transmission wires.

- Whether these settlements are prone to any environmental hazards such as flooding, land-slides etc.,
- Whether these settlements have any adverse impacts on surrounding settlements,
- Whether the urban poor have access to basic services such as water supply and sanitation, whether alternative arrangements are used due to non-availability of municipal services and what is the cost of access to basic services,
- Whether they have access to health care and education facilities and whether alternative arrangements are used due to non-availability of municipal services and what is the cost of access to these services,
- Whether they have legal shelter or any security of tenure,
- What is the status of their employment, home-based enterprises and credit facilities,
- Are they exposed to pollution and environmental hazards; and
- What is the status of their health, particularly women and children.

The above assessment would lead to the identification of the following components for inclusion in the ESR :

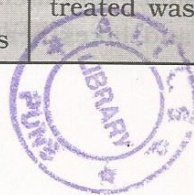
1	Identification of specific environmental problems faced by the urban poor
2	Identification of specific environmental problems faced by the city in general as a result of the settlements of the urban poor
3	Identification of gaps in the provision of municipal services at specified settlements of the urban poor
4	Evaluation of the performance of ULB and other public agencies' programmes related to urban poor in the fields of provision of basic services, slum improvement, employment and poverty alleviation, health and education etc.
5	Evaluation of targeting of various subsidies
6	Identification of corrective actions to be taken by the ULB and other agencies.

Audit and for Upgradation of Infrastructure

Provision of urban infrastructure is the most crucial responsibility of the ULB, which also has important bearing on urban environment, it is necessary to include in the ESR a plan for upgradation of infrastructure, which would form a

part of the Environmental Management Plan (EMP) elaborated later in these guidelines. The plan should indicate the measures to be adopted for meeting the infrastructure requirements and their short term and long term targets. It would include the following components :

Sr. No.	Sector	Measures	Indicators
1	Water Supply	New Scheme Rain water Harvesting Control of Leakages Metering Costing and pricing	Additional quantity and coverage in distribution Additional quantity of water Quantity of water saved Quantity of water saved Amount of increase in cost recovery
2	Waste water management	Installation of waste water conveyance and treatment system	Additional capacity for collection, con transportation and disposal
		Improvement in existing conventional system, if any Re-use of biologically treated water	Additional water treated and disposed, leakages and overflows stopped Quantity of potable water saved
3	Solid waste management	Purchase of bins, equipment and procurement of disposal sites Recycling of waste Production of manure and energy Decentralized SWM	Addition in capacities for storage, transportation and disposal Quantity reduced for treatment and disposal Quantity reduced for disposal Amount of waste and cost saved
4	Roads	Construction of new roads and widening and upgradation of existing roads Removal of traffic bottlenecks Demand Management	Increase in road capacity Quantity of congestion reduced Number of vehicles reduced on certain roads
5	Provision of Basic environmental and Social services in slums	In-situ upgradation of slums	Number of households covered
6	Hospital Waste Management	Segregation of Bio-Medical waste and its treatment in accordance with BMW Rules	No.of health units covered. Ratio of treated waste.



7.	Prevention of Air Pollution	Air quality monitoring. Identification of High Pollution points. Action plan for mitigation.	Fall in the air quality index.
8.	Public Toilets and sanitation in slums.	Estimation of the shortfall. Community mobilization. Construction of toilet blocks. Handing over the management to community. Connecting the toilets to sewerage line or septic tanks.	No. of toilet blocks constructed. No. of toilets block handed over to the CBOs. No. of toilets connected to sewerage line or septic tanks constructed. Reduction in the incidences of water and air borne diseases. Reduction in open squatting.
9.	Public toilets /urinals for floating population	Estimating requirement. Identifying locations and the NGOs/CBOs for construction and maintenance. Construction of toilets.	No. of toilets/ urinals constructed and maintained.
10.	Storm water Drains(SWD)	Identifying deficiency of SWD in slums and the encroachments at the outfalls.	Construction of the SWD. Clearing encroachments near the outfall/ outlets.

In additions the issues of slum redevelopment, Control on thin plastics and Noise pollutions, coastal zone management such as relating to mangrove forests, estuaries lakes etc. may also be in the above criteria.

A chapter on health hazards including morbidity and mortality caused by water borne and air borne infectious diseases, malaria, HIV aids. etc. should be added .In fact the incidence of these diseases can become an indicator of the success of the mitigation measures on waste management, water quality, air quality monitoring and sanitation.

Yet another chapter on disaster proneness of the city, casualties and loss to property caused by landslide, flooding, cyclone etc. and the measures taken to rehabilitate the residents in the sensitive areas should be included in the ESR.

The measures such as Rain water harvesting, solid waste and waste water recycling should be included as a separate section in the ESR

Protection and development of places of religious significance, heritage suites and archaeological monuments, parks and lakes beaches

should be part of the ESR and be monitored along with other indicators.

Institutional set-up within ULB

Within a ULB, the Chief Executive Officer (Mayor/ Commissioner), is the only officer who has the broader picture of all departments. However the environmental responsibilities are generally assigned to a health officer, who usually looks after primary health and conservancy. The crucial areas of water and waste water management remain outside the purview of the health officer. The roads, storm water drainage is also usually looked after by independent officers. It is therefore necessary for the CEO of the ULB to evolve the institutional setup wherein the environmental agenda can be effectively implemented and monitored and accountability fixed. The first ESR should suggest such mechanism.

Capacity Building and Information System for ULB

Though the ULBs are responsible for protecting local environment, they are usually over-bur

dened with the tasks related to provision of municipal services and amenities and in dealing with unauthorized developments. They generally lack the capacity to deal with local environmental issues. Identification of their capacity building requirements in the ESR would be an important step in initiating the ULBs in this regard. The capacity building process is however a long drawn affair and it is, therefore, necessary to identify short term and long term requirements at the ULB level. The capacity building activities could be in the nature of awareness building and training related to the following :

- Natural Resources and its interrelationship with development
- Environmental Indicators, their monitoring and use of information systems
- Relationship of urban infrastructure and environment
- Relationship of urban poverty and environment
- Preparation and implementation of Environmental Management Perspective Plans and Action Plans
- System of monitoring and public accountability

Environmental assessment, monitoring and management involves collection, compilation and analysis of large and varied data. Such information can be effectively handled with the help of computerized information systems, particularly Geographical Information System (GIS) as it is important to assess the environmental impacts in various geographic parts of the city. Preparation of the ESR should essentially be based on such an information system and it should, therefore, be considered as a pre-requisite for preparation of ESR.

Preparation of Environmental Management Plan

The assessment of overall environmental status, availability of basic services, status of ur-

ban poor and capacity building requirements of ULBs should lead to identification of mitigation and improvement measures, and a long term strategy to implement such measures. These would form a part of a perspective Environmental Management Plan (EMP). It is the ULB, which would be expected to implement the Environmental Management and Action Plans. However, except for provision of basic urban services including solid waste management, the ULB has limited control on use and pollution of various natural resources by private enterprises, which have important bearing on the local environment. The State Pollution Control Board is responsible for controlling pollution. The ULB will have to take such matters to the Board. The EMP should, therefore, identify separate measures and strategies for issues to be directly dealt by the ULB and those which the ULB will have to pursue with other agencies. An illustrative framework for identification of environmental problems, preparation of management strategy and areas for immediate action is given in Annexure-I. The EMP would cover the following :

- Preparation of a perspective plan and strategy for control of air, water, soil and noise pollution in the city including mitigating measures and prevention of pollution in future.
- Identification of most polluted areas requiring immediate attention and urgent measures required to be undertaken.
- Identification of environmentally non-conforming land-uses in existence and suggest measures for dealing with them.
- Identification of types of developments to be undertaken in future for which environmental impact assessment shall be made mandatory.
- Setting time-bound targets for removing the infrastructure backlog and meeting new requirements including assessment of investment requirements for achieving these targets.

- Identification and strategy for implementation of specific measures for improving the living conditions and standard of living of the urban poor including effective implementation of all Government programmes and proper targeting of subsidies. The measures may also include resettlement and rehabilitation of low – income settlements, if so necessary for improving their living conditions and those for the city in general.
- A perspective plan for establishment, maintenance and use of Environmental Information System.
- The perspective plan would be broken down into long term and short term implementation strategy. The short-term implementation strategy should include annual targets and broad cost estimates.

Preparation of Annual Environmental Action Plan

The Annual Action Plan would be based on the short-term implementation strategy and would indicate the following :

- targets for the plan year
- activities to be undertaken to achieve the targets

- manpower requirements including identification of activities to be outsourced and cost of the activities
- Provision of manpower and finances

Evaluation of the Implementation of the earlier Annual Action Plan

The ESR for the second year and subsequent years would include evaluation of the earlier year's Action Plan including achievement of targets, gaps in implementation and measures to be adopted in the next year's Action Plan, their costs and financial provisions. The Annual Plans would be rolling in nature and would be linked to annual budgets of ULBs.

Preparation of ESR

Given the current limited capacity of the ULBs in dealing with the environmental issues, it would be necessary for the ULBs to engage outside experts to prepare at least the first comprehensive ESR. With the improvement of the local capacity through training and involvement in environmental issues, it would be possible for the ULBs to update ESRs from year to year and also add new aspects as and when necessary.

Annexure-I

An illustrative framework for identification of environmental problems, preparation of management strategy and areas for immediate action

Sr. No.	Environmental Problems	Management Strategy	Action Plan (First Year)
1 Air Pollution due to :			
	Motor Vehicles	Improving traffic management by removing bottlenecks Improving roads Pedestrianisation of densely populated areas	Preparing traffic management and road development plan, identifying investment requirement and preparing project report
	Industries	Reduction in and treatment of emissions Relocation of non-conforming industries	Co-ordinating with Pollution Control Board, preparing plan for relocation
	Solid Waste	Improving waste collection, transportation and disposal system Preventing burning of waste.	Preparing SWM improvement plan, identifying investment requirement and preparing project Making legal and institutional provisions for enforcement
	Construction	Preventing spread of dust	Making legal and institutional provisions for enforcement
2 Water Pollution due to :			
	Domestic Waste Water	Improving / Installing waste water collection, transmission and disposal system Provision of public conveniences Providing safe and adequate drinking water	Preparing plan for water supply, waste water system and provision of conveniences, requirement and preparing identifying investment project
	Industrial Effluents	Reduction in and treatment of effluents Relocation of non-conforming industries	Co-ordinating with Pollution Control Board, preparing plan for relocation
	Solid Waste	Improving waste collection, transportation and disposal system	Preparing SWM improvement plan, identifying investment requirement and preparing project

3	Noise Pollution due to :		
	Motor Vehicles	Improving traffic management by removing bottlenecks Preventing noise	Preparing traffic management plan, identifying investment requirement and preparing project Making legal and institutional provisions for enforcement
	Industries	Reduction of noise Relocation of non-conforming industries	Co-ordinating with Pollution Control Board, preparing plan for relocation
4	Soil Contamination due to :		
	Dumping of Domestic Waste	Improving waste treatment and disposal system	Preparing SW treatment and disposal plan, identifying investment requirement and preparing project
	Dumping of Industrial and Bio-medical Waste	Improving treatment and disposal of waste	Co-ordinating with Pollution Control Board
5	Flooding		
		Improving storm water drainage system Relocation of settlements blocking natural flow or those in the low-lying areas Taking steps for preventing spread of diseases	Preparing SWD plan, identifying investment requirement and preparing plan for relocation of settlements and for prevention of spread of diseases.

In addition to the above, the management strategy and action plan would also cover establishment and maintenance of environmental information system and capacity building of the ULB. The action plans for subsequent years would include actual investment targets for various types of urban infrastructure and next steps for long-term actions such as reducing industrial pollution in co-ordination with Pollution Control Board, implementing relocation plans etc.

Water Pollution due to :			
Domestic Waste Water	Improving / installing waste water collection, transmission and disposal system Provision of public conveniences Providing safe and adequate drinking water	Preparing plan for water supply, waste water system and provision of conveniences, identifying investment project	
Industrial Effluents	Reduction in and treatment of effluents Relocation of non-conforming industries	Co-ordinating with Pollution Control Board, preparing plan for relocation	
Solid Waste	Improving waste collection, transportation and disposal system	Preparing SWM improvement plan, identifying investment requirement and preparing project	

Annexure-II

Chapterisation For ESR

Chapter No.	Chapter / Sub-points
1	Introduction <ol style="list-style-type: none"> 1.1 Statutory requirement for preparation of ESR 1.2 History of ESR preparation 1.3 Objectives of ESR
2	City Environment Profile <ol style="list-style-type: none"> 2.1 Environmental Resources 2.2 Activity Sectors 2.3 Major Impacts on Environment 2.4 New Features not covered in earlier ESRs
3	Summary and Targets of earlier ESR <ol style="list-style-type: none"> 3.1 Major Recommendations 3.2 Targets specified in Environmental Management Plan 3.3 Evaluation of Achievement 3.4 Balance Tasks to be Completed in Reporting Year
4	Environmental Indicators for the Reporting Year <ol style="list-style-type: none"> 4.1 Air Pollution 4.2 Noise Pollution 4.3 Water Pollution 4.4 Coastal Pollution 4.5 Ground Water Contamination 4.6 Soil Contamination 4.7 Solid Waste Management 4.8 Terrestrial and Marine Ecological Features 4.9 Identification of Areas Prone to Environmental Degradation
5	Pollution Zones / Sensitive Areas and Their Causes <ol style="list-style-type: none"> 5.1 Areas with for specific Types of Pollution 5.2 Areas Facing Multiple Types of Pollution 5.3 Geographically Sensitive Areas

6	Sources of Pollution and Estimation of Pollution Loads <ul style="list-style-type: none"> 6.1 Air Emission Inventory for various Pollutants and Activity Sectors 6.2 Discharge Rates and Pollution Loads for various Pollutants, Activity Sectors and Water Bodies 6.3 Identification of Sources in Excess of Norms 6.4 Geographical Areas Affected Most by Pollution 6.5 Population Affected by Pollution 6.6 Environmental Resources Affected by Pollution
7	Provision of Urban Infrastructure <ul style="list-style-type: none"> 7.1 Estimation of Population 7.2 Geographical Coverage of Physical Developments 7.3 Geographical Coverage of Infrastructure Provision 7.4 Quantity & Quality of Urban Infrastructure : Norms, Requirement Supply, Deficiencies, Measures for removing Deficiencies including non-conventional measures for : Water Supply, Sewerage, Solid Waste Management including Hazardous and Bio-medical Waste, Public Conveniences, Roads, Storm Water Drainage, Street Lighting, Health and Education, Recreation 7.5 Alternative Arrangements made by people to meet their requirements 7.6 Impact of Infrastructure Deficiencies and Alternative Arrangements on Natural Resources of Air, Water and land 7.7 Impact of Infrastructure Deficiencies and Alternative Arrangements on people in terms of their Health and Safety
8	Provision of Infrastructure to Urban Poor <ul style="list-style-type: none"> 8.1 Estimation of Population of Urban Poor 8.2 Geographical Conditions of Settlements of the Poor 8.3 Exposure to Environmental Hazards 8.4 Impact of these Settlements on Surrounding Areas 8.5 Status of provision of Urban Infrastructure, Alternative Arrangements and Cost to the Poor including : Basic Services, Shelter, Health and Education, Employment and Income with specific reference to Women and Children 8.6 Evaluation of Public Programmes for Urban Poor 8.7 Evaluation of Targeting of Subsidies 8.7 Measures for removing Deficiencies including non-conventional measures
9	Capacity Building and Information System for ULB <ul style="list-style-type: none"> 9.1 Institutional Setup and Reporting and Monitoring Mechanism within ULB 9.2 Capacity Building Requirements of Staff

	9.3 Training and Other Efforts made for Capacity Building 9.4 Information System for Environmental Management
10	Environmental Management Plan (EMP) 10.1 Objectives of EMP 10.2 Long Term Strategy for Environmental Improvement 10.3 Short Term Strategy for Environmental Improvement 10.4 Tasks to be Carried out by the ULB including time-bound Targets for Infrastructure Improvement 10.5 Strategies for Improving the Living Conditions and standard of Urban Poor 10.6 Issues to be taken up with Other Agencies 10.7 Plan for Capacity Building and Information Systems
11	Annual Environmental Action Plan for the Next Year 11.1 Targets for the Year 11.2 Activities for Achieving Targets 11.3 Manpower and Investment Requirements : Internal and External 11.4 Provisions for Manpower and Finances





OBJECTIVES

The main emphasis of the Institute's work is to see that the local bodies can contribute more effectively to the development process and provide the citizens with better living conditions by meeting their aspirations in terms of required amenities, infrastructure and better environmental conditions, thus contributing to social and economic development of the society as a whole by better management of the human settlements. While these are the long-term objectives, the immediate ones are :

- ❖ To advance knowledge of the principles and practices of Local Government by conducting research and by organising training courses and programmes at various centres in India for officials and elected representatives in the local bodies.
- ❖ To strengthen and improve Local government Institutions by improving their performance through education, orientation training and bringing them together for common endeavour by organising specialised conferences, conventions and seminars.
- ❖ To make available a platform for members of local bodies and officials for exchange of views and ideas related to urban development and administration.
- ❖ To represent the views of local authorities supported by research work to the concerned higher authorities from time to time.
- ❖ To publish bibliographies, articles, books and other literature on matters of interest to local bodies.
- ❖ To publish journals, bulletins and other literature on different aspects of Local Government and on the working of Local bodies in different states.
- ❖ To undertake research studies in public administration, problems of local bodies and also in related topics of urban and environmental factors and arrange for their publication etc.
- ❖ To establish and maintain an information-cum-documentation service for local bodies.
- ❖ To undertake consultancy assignment in various areas of urban development and problems of local bodies with view to improve and develop organisational, managerial and operational efficiency.

In view of above, the Institute has been collaborating with the relevant government departments, Central and State, Universities, organisations and Research Institutions. The work of the Institute covers several aspects involving a multi-disciplinary teamwork.





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